folio
UNIVERSITY OF ALBERTA

Page 3
Bettering women
Academic Women's Association names engineer top teacher for second year in a row

Page 4
Helping the medicine go down
Med students benefit from two teaching award winners

Page 7
Staff Spotlight
Keeping the U of A's pools both safe and fun

Volume 49 Issue 19 | May 25, 2012 | www.folio.ualberta.ca

Original business of farming department turns 50

Michel Proulx

It was a controversial beginning but 50 years on, the Department of Resource Economics and Environmental Sociology is firmly part of the fabric of the University of Alberta and the agricultural and natural resource management communities.

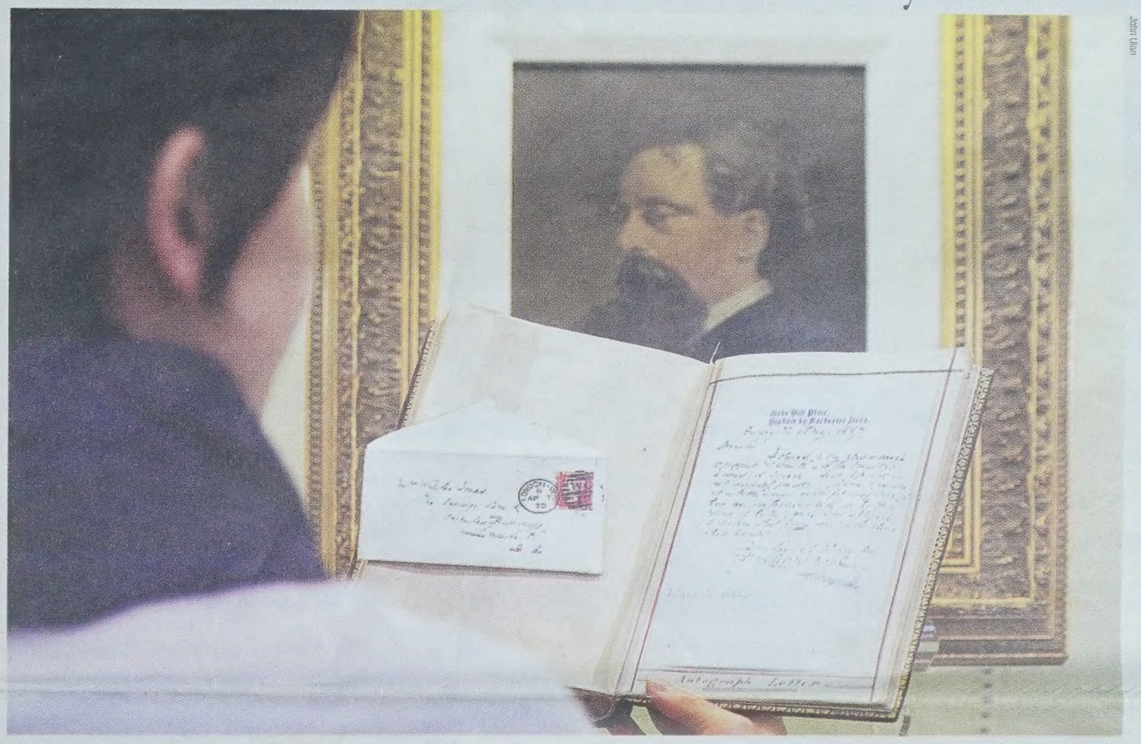
> "[Our new name] better signals our applied nature and the range of issues we address."
>
> Brent Swallow

During the 1950s, with just one professor devoting research and teaching to agricultural economics, the farming community wasn't satisfied with the level of economics research applied to the agricultural sector, particularly in the area of farm management. After all, the farming community was very close to the Faculty of Agriculture, which had been founded in 1915 with a mandate to relate its research to practical production problems as well as the social and economic problems of farm people.

To rectify this oversight, Gordon Ball was brought in from Iowa State University as a professor of farm management in 1960. He immediately made a proposal to transfer all agricultural economics courses taught in the Department of Political Economy to the Faculty of Agriculture. The university rejected the proposal and Ball resigned in protest, returning to Iowa. The farming community protested and eventually persuaded the university to reverse its decision and create the Department of Agricultural Economics and Farm Management in 1961-62.

Continued on page 3

It is the best of times at the library



John Ulan

The Bruce Peel Special Collections Library's newest exhibit, Charles Dickens (1812-1870): From Whom We Have Great Expectations, is on until July 31. The exhibit features several of Dickens' works, including this copy of The Mystery of Edwin Drood (1870), which has been supplemented with various documents and letters. The most interesting of these is an original handwritten letter by Dickens declining a dinner invitation.

Computing pioneer named dean of the Faculty of Science

Michael Brown

The University of Alberta Board of Governors has appointed Jonathan Schaeffer as dean of the Faculty of Science. His initial five-year term begins July 1.

> "If I have to identify one aspect of what I love about the University of Alberta, it is, without a doubt, the collegial environment."
>
> Jonathan Schaeffer

Schaeffer is an internationally recognized researcher in the field of artificial intelligence. He is best known for using games as his experimental test bed. He becomes the dean of science after four years in the role of vice-provost and associate vice-president (information technology) at the U of A.

"Jonathan is passionate about teaching and committed to teaching excellence. He considers the university environment to be all about students and wants to see their experience at the U of A become a turning point in their lives. He considers the teaching arena to be ripe for new perspectives that will drive the next innovations in pedagogy," said U of A provost Carl Amrhein. "His approach to decision-making is to listen to understand others first, to analyze, and then to act based on facts, while seeking outcomes that are a win for all.

"Recognizing and supporting the ideas of others and encouraging ventures in innovation are important to him."

Schaeffer's devotion to the U of A runs deep. Beyond a post-secondary education in Ontario, the U of A Department of Computing Science has been home for his entire professorial career since 1984.

"If I have to identify one aspect of what I love about the University of Alberta, it is, without a doubt, the collegial environment," said Schaeffer. "I have visited many universities around the world and I have yet to find a large research-intensive university that is close to

Continued on page 2

Capitalizing on the momentum

Martin Ferguson-Pell renewed as dean of the Faculty of Rehabilitation Medicine

Story on page 3

Supplied

folio

Volume 49 Issue 19
Office of the Vice-President
(University Relations)
Marketing and Communications
6th Floor, General Services Building
University of Alberta
Edmonton, Alberta T6G 2H1

Editor
Michael Brown
michael.brown@ualberta.ca

Contributors
Bryan Alary, Bev Betkowski, DC Brandon, Michael Brown, Richard Cairney, Michael Davies-Venn, Alexandria Eldridge, Jamie Hanlon, Jenna Hoff, Raquel Maurier, Ken Mathewson, Brian Murphy, Ces Pereira, Michel Proulx, Carmen Rojas, Richard Siemens, John Ulan

Graphic Design
Marketing and Communications

folio's mandate is to serve as a credible news source for the university community by communicating accurate and timely information about issues, programs, people and events and by serving as a forum for discussion and debate. folio is published 23 times per year.

The editor reserves the right to limit, select, edit and position submitted copy and advertisements. Views expressed in folio do not necessarily reflect university policy. folio contents may be printed with acknowledgement.

Inquiries
Comments and letters should be directed to Michael Brown, editor, 780-492-9407
michael.brown@ualberta.ca

Corporate & Display Advertising
Deadline: Thursday, noon, one week prior to publication
Debbie Keehn, 780-492-2325
folioads@ualberta.ca

Classified Ads
Deadline: Thursday, noon, one week prior to publication
Debbie Keehn, 780-492-2325
folioads@ualberta.ca

Talks and Events
Deadline: Thursday, noon, one week prior to publication

Enter events online at www.uofaweb.ualberta.ca/events/submit.cfm

Circulation/Change of Address
Contact Debbie Keehn at 780-492-2325 or via e-mail at debbie.keehn@ualberta.ca

Billing Info
Contact Fatima Jaffer at 780-492-0448 or via e-mail at fatima.jaffer@ualberta.ca

ISSN 0015-5764

Finding a way to wring water from tailings ponds

Alexandria Eldridge

As Alberta faces increasing pressure to make the oil industry more sustainable, one Faculty of Agricultural, Life and Environmental Sciences researcher may have found a natural solution to a problem that has been plaguing oil companies for years.

Tariq Siddique, an assistant professor in the Department of Renewable Resources and principal investigator with a U of A oilsands densification group led by biological sciences researcher Julia Foght, says he and his team are finding that microbes could be used to increase the amount of water recovered from tailings ponds.

When oilsands are processed, tailings are the materials left over. They include water, clay particles, unrecovered bitumen, and residual solvents that are used during the process of refining oil. This leftover material is dumped into tailings ponds where it can take three to five years for the water to separate from the clay particles. Even then, further settling requires decades.

"According to the rules and regulations, [companies] are required to recycle 85 to 90 per cent of the water that they use. If [tailings] don't settle quickly, they are not able to recover more water," explained Siddique, adding that although some companies are using polymers to quicken the densification process and meet the requirements, the future environmental implications of this are unknown.

Siddique and his collaborators have found a natural way to speed up the settling process—they discovered that microorganisms in tailings ponds degrade hydrocarbons, even complex hydrocarbons, from residual solvents and leftover bitumen, which rids tailings of these contaminants.


Richard Siemens

These experimental columns in Tariq Siddique's lab were used to incubate tailings samples and observe densification.

"Where microbial activity is more, we have seen more densification, more settling of clay particles," he said. "In this case ... with a natural process, you are able to settle the clay quickly [and] you will recover more water for reuse in the extraction process."

Because more microbial activity means more densification, Siddique has been conducting studies using a small-scale bioreactor in which he feeds organic waste to microbes to grow the population, hoping to accelerate densification. In the lab, his team observed about 20 per cent water release within static columns, while in the bioreactor, they observed about 40 per cent water release.

"We were thinking that if you construct a kind of bioreactor, feeding microbes with some agricultural waste products, you can increase the microbial population to accelerate densification."

However, there is a potential drawback to an increased microbial population—this process of hydrocarbon breakdown brings greenhouse gas emissions, particularly methane. Siddique says it can be turned into a positive source of energy.

"You can trap and use [it]," he said. "Otherwise, any unrecovered hydrocarbons—humans won't be able to utilize those. But if you can transform it into methane, you can use those."

Siddique has also developed a kinetic model in order to predict how much greenhouse gas will be produced depending on the amount of hydrocarbons in tailings, which could be used to calculate the emissions of oil companies and help in developing regulations to mitigate these emissions.

"If we know the concentration of those hydrocarbons in the tailings, we can predict the greenhouse gas emissions," he said. "We now have some basic fundamental knowledge about the greenhouse gas emission process—what the source is, what type of contaminants are degradable—and who the key players are."

Tailings ponds cover about 170 square kilometers of land in Alberta.

New dean of science looking to add to collaborative nature of faculty

Continued from page 1

being as collegial as the University of Alberta."

His work in heuristic search resulted in the creation of the checkers-playing program Chinook, the first computer program to win a human world championship in any game (1994). "It is nice to see it recognized in unusual ways, such as the *Guinness Book of World Records*, a *Trivial Pursuit* question, and a *Who Wants to Be a Millionaire?* question," said Schaeffer. "Then, when we solved checkers in 2007 (result: perfect play leads to a draw), it was amazing to see the global media coverage that it received, as well as the scientific recognition."

Schaeffer's scientific paper, "Checkers Is Solved," was a runner-up in Science's breakthroughs of the year for 2007, was named by Nature's readers as the ninth Most Important Achievement of the Year, and was one of the New York Times' "Ideas of the Year." Schaeffer's other game successes include Phoenix, a program that tied for first place in the 1986 World Computer Chess Championship, and Polaris, the first program to become competitive with world-class poker players.

Schaeffer is a leader in the field of high-performance computing (HPC) in Canada. In the late 1990s and early 2000s, Schaeffer's leadership led to the creation of a long-range plan for Canadian high-performance computing that allowed the university to acquire so-called "super" computers, with the capability of running computer programs simultaneously on many thousands of computers, allowing researchers to solve bigger computational problems faster.

For example, Schaeffer says WestGrid, the western Canadian HPC computing consortium, recently acquired a machine, housed at the U of A, that contains 2,048 computers and 16 terabytes of memory.

"High-performance computing allows you to power your work with a Lamborghini instead of a bicycle," he said. "I am proud of my role in getting people to work together provincially, regionally and nationally."

That leadership would lead Schaeffer into the administrative realm in 2005, when he became chair of Computing Science, and then into the vice-provost and associate vice-president role.

Schaeffer's research achievements led to a host of awards and honours. He received an E.W.R. Steacie fellowship from NSERC in 1997 for his influential games-related research. He is just one of a dozen Canadians ever named a Fellow of the American Association for Artificial Intelligence. He was a tier-1 Canada Research Chair (2002–2009) and is the iCORE Chair in High-Performance Artificial Intelligence Systems since 2001. In 2007, Schaeffer was elected a Fellow of the Royal Society of Canada.


Richard Siemens

Jonathan Schaeffer

Schaeffer says he attributes administrative, departmental and peer backing as critical to his many personal achievements, adding the U of A has always provided the support that only comes with being part of a team.

"I have been very fortunate in my career in many ways, but especially because colleagues, chairs and deans—past and present—created an environment in which I could flourish as a researcher and a teacher," he said. "It is important that I reciprocate. I have learned that I can get great satisfaction from helping others succeed."

Feds invest in U of A's green agriculture

Folio Staff

Canadian farmers will have the opportunity to increase their profits while mitigating their impact on the environment thanks to a $600,000 investment by the federal government into a University of Alberta study on greenhouse gas mitigation in agroforestry systems.

The money will be used to measure the amount of carbon that can be stored and the amount of greenhouse gas reduced with the use of agroforestry systems. Agroforestry provides productivity and profitability integrated with environmental stewardship. Results of this research may lead to new diversified farm income and new employment opportunities through the development of bio-based products.

"Our researchers are conducting innovative research that is providing solutions to some of the most pressing issues the world faces today, including environmental issues," said Lorne Babiuk, vice-president (research). "It is very gratifying for us to receive strong support on this project from the federal government as we continue to partner in ways that improve the quality of life for all Canadians."

Scott Chang, researcher in the Department of Renewable Resources, says this project will enhance the understanding and accessibility of beneficial management practices that can be adopted by farmers to mitigate greenhouse gas emissions in Canada.

"If the beneficial roles of agroforestry systems are demonstrated, opportunities exist to tie the beneficial management practices to economic gains for producers, for example, through payments for carbon offsets," he said.

Ferguson-Pell reappointed dean of the Faculty of Rehabilitation Medicine

Michael Brown

The University of Alberta Board of Governors has reappointed Martin Ferguson-Pell as dean of the Faculty of Rehabilitation Medicine. His second five-year term begins July 1, 2013, following his one-year term as acting provost.

"Dean Ferguson-Pell is an exemplary leader," said U of A provost Carl Amrhein. "A charismatic speaker, Dr. Ferguson-Pell keenly articulates the vision of the faculty and led the faculty in raising its profile within the academy, with hospital and clinical partners, and with the community at large. He initiates and develops external relationships, some of which have become resources in support of research, teaching and service programs."

Ferguson-Pell came to the University of Alberta in 2007 to assume the role of dean, after 11 years as research director for the Royal National Orthopedic Hospital and the inaugural ASPIRE Research Chair in Technology and Disability, where he founded the Centre for Disability Sciences at the Institute of Orthopedics and Musculoskeletal Science, University College London. His background is in biomedical engineering and he is a registered clinical scientist. He has extensive experience working in clinical-academic settings, developing engineering solutions to overcome barriers experienced by people with physical disabilities.

And while Ferguson-Pell says he made the move for the great opportunity to lead a faculty with an international reputation for excellence, he was impressed by the strong culture of innovation and creativity that existed when he got here.

> "The U of A is visionary in giving [the Faculty of Rehabilitation Medicine] the autonomy and the identity that it has."
>
> Martin Ferguson-Pell

"I think that the U of A is by far the most collegial university I have been associated with and I've found that while working at the U of A, I have been more productive than anywhere else I've worked," he said. Along with his research team, Ferguson-Pell recently opened the interdisciplinary Rehabilitation Robotics Lab at the Edmonton Clinic Health Academy. "I believe the positive focus that the university has, and the faculty and administrative structures, which are relatively streamlined compared with many other universities, are the main reasons I am also passionate about my research here."

In his time at the U of A, Ferguson-Pell has been successful in supporting and promoting the research and clinical activities within the faculty, and in positively influencing initiatives throughout the university. Among his more notable achievements is establishing two endowed chairs: the Military and Veterans Chair in Clinical Rehabilitation—a first in Canada—and the Chair in Musculoskeletal Rehabilitation.

Ferguson-Pell also guided the development of physical-therapy satellite programs in Camrose and, later this year, Calgary, which employ advanced real-time videoconferencing technologies. This synchronized teaching model enables the faculty to teach the entire university physical-therapy professional entry master's degree program simultaneously and interactively in three locations. Importantly, the model places education and training for professional practice where professionals are needed. This increases the likelihood that highly qualified professionals would remain in their own communities to practice, rather than relocate to areas in less need.

"This is really an innovative way of distributing our teaching out across the province," said Ferguson-Pell, who adds he is looking to get footholds in Alberta locations such as Fort McMurray, Grande Prairie and Medicine Hat, as well as focus on building clinical capacity for rehabilitation in the Calgary area. "We're a provincial program and I'm looking to get a strong starting point in these communities in terms of our presence and our contribution."

Going forward, Ferguson-Pell says he has a number of initiatives that focus on being seen as a leading rehabilitation medicine program. He says the faculty has made great strides in forming a world-class cluster of researchers in musculoskeletal science, and he foresees similar research clusters that focus on seniors, oncology rehabilitation, and occupational injury and rehabilitation.

"Rehabilitation is an increasingly important area in health sciences. With an aging population and with pressures on our health-care system, the professionals that we're producing through our programs are absolutely critical to Alberta's health economy of the future," said Ferguson-Pell.

"The U of A is visionary in giving a faculty like ours the autonomy and the identity that it has. The innovative research and excellent teaching that define our faculty are reinforcing the confidence the university has put in us by delivering on these excellent programs."

Engineering professor named Academic Woman of the Year

Richard Cairney

Chemical engineering professor Suzanne Kresta has won the Academic Woman of the Year award from the U of A Academic Women's Association, marking the second year in a row that an engineering professor has won the prestigious award.

"It's a real honour," said Kresta, whose win comes a year after civil engineering professor Faye Hicks won the award.

The award is presented in recognition of outstanding commitment to the betterment of women at the U of A and beyond. But Kresta says her approach to inspiring women is to simply be the best professor she can—it's sort of a stealth approach to levelling the playing field in engineering.

When she was an undergraduate engineering student at the University of New Brunswick, Kresta says, she had no female professors. The university itself recognized the issue.

"From the university president on down, they all said, 'You should become an academic—we need female engineering professors,'" she said. "I just wanted to build things, but it was clear that this was where I was meant to be and I figured out that the best way for this professor thing to work would be for me to just be the best professor I could be. That way I could be a role model to all of my students."

Clearly, Kresta sees engineering as a challenging and rewarding profession. Rather than make a big deal out of the fact that there are fewer women in the profession than men, she feels the best way to promote the profession is by promoting what engineers do.

"Engineering is a great job," she said. "There are lots of problems in the world and we need smart people to help solve them.

She adds one important note: "I want my daughters to have access to the best jobs out there—it is that simple."

In fact, one of Kresta's daughters is in her second year of engineering, studying mechanical engineering at the U of A; the other, in high school, is hoping to study engineering here as well.

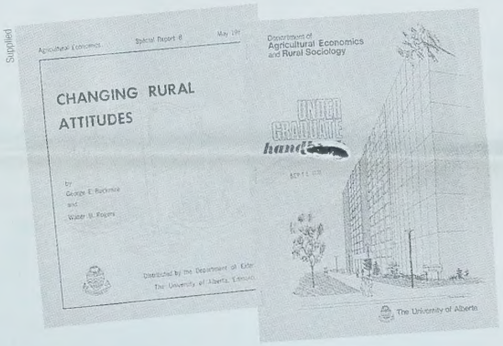
Supplied

Chemical engineering professor Suzanne Kresta (middle) has been named Academic Woman of the Year.

REES a big part of the Alberta agriculture conversation

Continued from page 1

Supplied



Resource materials from the Department of Resource Economics and Environmental Sociology's storied past.

Travis Manning was hired out of the Federal Reserve Bank of Kansas City to build the department to fulfil the needs of the agricultural community. Manning was department chair from 1962-1974 and remained a professor in the department until his retirement in 1983.

Research conducted in the new department was clearly more applied, covering topics such as livestock marketing practices, economic benefit analyses of irrigation districts, fertilizer practices and crop yields.

One notable early achievement was exposing hog marketing practices that were costly to producers and consumers. Recommendations made by faculty members to rectify the situation were adopted by the Alberta Hog Marketing Board. Another achievement was uncovering the practices of a major grocery chain, which priced its items higher in lower-income neighbourhoods. The federal government undertook action under the Combines Investigation Act and obtained a consent order against the food retailer.

In 1969, the department underwent its first name change, becoming the Department of Agricultural Economics and Rural Sociology, to better reflect the emerging field of rural sociology in the program.

The department also found its physical home during its first decade. Initially, the department was in a series of ring houses on the northwest corner of campus, but it moved towards the end of the decade to the fifth floor of the General Services Building, where it continues to be located today.

In 1975, the department changed its name to Rural Economy.

The next 30 years saw the department emerge as one of the premier places in Canada and the world with respect to environmental economics, specifically studying people's behaviour and how they value different attributes of the environment. It would expand in the areas of food marketing, consumption, and safety issues, as well as environmental sociology. The department now has five professors working in this area, three of whom are jointly appointed with other departments.

As the department evolved, it increasingly linked its research on issues of farm production, supply management, food marketing, environmental economics and rural sociology to policy.

"We're part of the innovation policy in Alberta," said Brent Swallow, chair of the department.

In 2011, the department changed its name again, this time to resource economics and environmental sociology. "It better signals our applied nature and the range of issues we address," said Swallow.

As for the future, Swallow says the department is well positioned as it turns its attention to the new agricultural and environmental challenges the world faces with higher food prices, the globalization of big agricultural firms and new economic models.

"The Canadian Wheat Board is no more, Viterra is being broken up and sold off, and I expect there will be more similar changes in the foreseeable future that will bring a new set of challenges," said Swallow. "The next 20 years should be very interesting. There will be a new era of agricultural policy debate, with supply chain management, international trade, food safety and the links between agriculture and the environment at the centre of the debate."

Supplied

This photo was taken from the first issue of the Agriculture Bulletin (April, 1962).

The department is commemorating its first 50 years with a two-day celebration beginning with a keynote address by Globe and Mail national affairs columnist Jeffrey Simpson on Friday, May 25.

For more information on the celebration, visit www.rees.ualberta.ca/50YearsRees.aspx.

Trudeau scholar selects U of A to begin journey to global citizenship

Jamie Hanlon

Talk to University of Alberta PhD student Nathan Andrews about his academic experiences, and you will discover a recurring theme of community.

> "To be a global citizen, you have to really step out of your zone and do something."
>
> Nathan Andrews

The journey has led him from his home in Aburi, Ghana to study at the national university in Accra. Four years ago, he made a move to start himself on the road to becoming the global citizen he wants to be by coming to Canada.

"To be a global citizen, you have to really step out of your zone and do something," said Andrews. "I wanted to be that global citizen who is able to appreciate different cultures and see people from different perspectives."

Two years ago, that approach led him to the U of A, and now to another prestigious community that has left him feeling "surreal" and "unable to explain."

Andrews was named one of 15 Trudeau scholars for 2012 in Ottawa May 15. He also became the University of Alberta's eighth such scholar named since the awards were created in 2002. With this prestigious award worth $180,000 over three years, he joins an engaged community of social sciences and humanities scholars devoted to issues of importance to Canadians, based on the Trudeau Foundation's themes: human rights and dignity, responsible citizenship, Canada in the world and people in their natural environment.

"I'm grateful that the Trudeau Foundation's board saw something in me that would be useful to the community," he said, "and that I can benefit from that community."

Andrews notes that the university's research focus and its reputation as a leader when it comes to graduate scholarships were major factors in his choice to come to the University of Alberta. He credits his U of A experience for being named part of this new community of scholars. He says that members of the department of political science are pushed to strive for academic excellence and are made aware of funding opportunities such as the Trudeau award.

"I'm really glad to be part of this university, and I've tried to engage in this community," he said.

Andrews, who is studying international relations and comparative development, says his area of study, mining and sustainable development, certainly has both national and international concerns. He says that mining companies need to live up to their responsibilities and their rhetoric about helping communities affected by mining achieve a good, sustainable life.

John Ulan

PhD student Nathan Andrews has been named one of Canada's 15 Trudeau scholars for 2012.

"These companies come in with all these promises and their websites say 'we adhere to these rules and regulations,' but when you get down to the communities, they aren't really feeling the impact of all the good things that are on the website," he said. "We have to make sure corporations are going to safeguard the people."

The opportunity for networking within that community and finding so many like-minded people in the group is a key reason Andrews is elated at being named a scholar. He says that the strong network of researchers, both seasoned and novice, adds to the rich experience of meeting people from different fields of study who will have potential impact on his research and help guide him down his academic path.

"I like the network that Trudeau offers. Every scholar is associated with a mentor and that mentor is to connect the scholar with other people that he or she might be interested in meeting," he said. "To find that there are so many people who are interested in social change, that is just amazing."

Uncovering passion and breaking down barriers keys to good teaching

Raquel Maurier

Helping students discover a passion for scientific research and breaking down barriers so students are treated as equals—these are the teaching philosophies of two members of the Faculty of Medicine & Dentistry who have been recognized by the University of Alberta.

Mark Glover has been awarded the 2012 Award for Excellence in Graduate Teaching, and Melanie Lewis has been awarded the 2012 Rutherford Award for Excellence in Undergraduate Teaching.

Glover, a researcher and professor in the Department of Biochemistry, says his teaching philosophy is to help graduate students discover a passion for science through self-directed research.

"I try to keep them inspired when times get tough," said Glover. "You can encounter puzzling problems and results during research studies. I try to help them understand what's happening and guide them along. I keep things positive.

He adds, "I want them to be able to experience the fun and excitement of doing their own independent research. It is a really satisfying career. It's really fun."

Supplied

Mark Glover

Glover said he was humbled when he learned he had won the award.

"You feel grateful because you work pretty hard with these graduate students over a long period of time and you hope you are genuinely making a positive impact on their learning. To know my teaching has made a difference for them is very rewarding."

Melanie Lewis, an associate professor in the Department of Pediatrics and the faculty's associate dean of learner advocacy and wellness, said she is thankful to have the opportunity to teach as well as practise her specialty.

"This award matters a lot to me because it's from the students. It's the students that matter and when I find out, often by happenstance, that I influenced someone during their undergraduate medical career or residency, it's very meaningful to me."

What's her teaching philosophy?

"It's directed around breaking down barriers between the student and the teacher—pretty much everyone calls me Mel. My patients call me Mel. My students call me Mel. I feel titles can be a barrier to exchanging ideas," Lewis said.

"I consider students my colleagues—it's a sharing of information. I'm always learning and they're learning, too. It's a rich source of medical education for me to be around patients and students, and really listen and support their ideas and be a mentor."

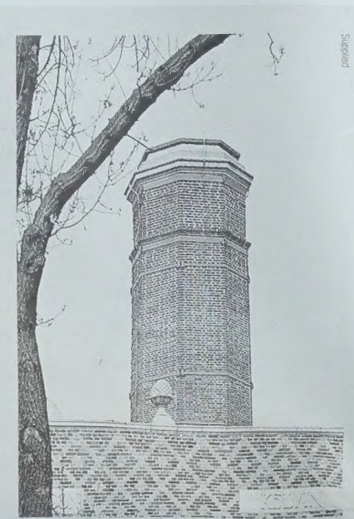
Lewis was instrumental in redesigning the pediatric curriculum for the U of A medical school, and she collaborated with other educators across Canada to redesign the national pediatric undergraduate curriculum. She says the new curriculum has been very beneficial for students and professors.

Supplied

Melanie Lewis

Are You a Winner?

Congratulations to Frances Pownall, whose name was drawn as part of Folio's May 11 "Are You a Winner?" contest. Pownall correctly identified the support pillar in the photo as being located under the pedway between SUB and the Agriculture Forestry Building. For her efforts, Pownall has won a U of A sweater courtesy of the U of A bookstore. Up for grabs this week is another sweater. To win, simply identify where the object pictured is located and email your answer to folio@ualberta.ca by noon on Monday, June 4, and you will be entered into the draw.



Supplied

Study uncovers possible ACE in the hole for treating diabetes

Quinn Phillips

Lyall Sneddon's health rap sheet is a lengthy one.

"I'm a Type 1 diabetic, I have heart disease, I have kidney disease and eye disease as I'm starting to lose my eyesight," said Sneddon. "Diabetes has really complicated my life."

> "Diabetes is the world's most common cause of blindness and renal failure, so this work is very important."
>
> Lyall Sneddon

Let's not forget breast cancer three years ago as well.

Now, Sneddon has to watch what she eats every day and is on dialysis three times a week.

"It has kind of consumed my life—but you have to keep on fighting and keep on going," she said. "Sometimes you want to give up, but then you stop and you think, 'well, you have a husband and kids and grandchildren and great-grandchildren. And you want to be there to watch them grow up, and if you give up you don't get to see that.'"

Supplied

Gavin Oudit talks with his patient, Lyall Sneddon.

Sneddon is a patient of University of Alberta cardiologist Gavin Oudit, who has long been doing research on a molecule called ACE2, which he has previously shown protects the heart from cardiovascular disease. In his most recent work, published in the May 11 edition of *Circulation Research*, Oudit and colleagues at the University of Florida found that lab models of diabetes that lacked ACE2 had worse cardiovascular complications related to diabetes.

"In patients, if you have high levels of ACE2 in your vascular reparative cells, you do not get diabetic complications, even if your diabetic control is very poor," said Oudit. "We're hoping to show that patients who lack ACE2 are more susceptible to diabetic complications."

Oudit's related studies have also looked at another major organ affected by diabetes: the kidneys. ACE2 proved protective in these organs as well.

The next step is to analyze human blood samples from patients in Edmonton to see the effects of ACE2 in people with diabetes. The researchers will screen the blood of both Type 1 and Type 2 diabetic patients because they think the research is relevant to both types.

Human recombinant ACE2, which is a pure form of this enzyme, is currently moving into Phase 2 clinical trials as a treatment for lung disease. The hope is that its use could then be extended as a pharmaceutical to treat patients with diabetes so they can completely avoid cardiovascular, kidney or eye disease.

"Diabetes is the world's most common cause of blindness and renal failure, so this work is very important," he said.

Oudit's study was funded by the U.S. National Institutes of Health, Alberta Innovates – Health Solutions and the Canadian Institutes of Health Research.

Researcher finds kids suffering from FASD benefit from brain training

D.C. Brandon

For those who have played the Nintendo DS game *Brain Age*, it will come as no surprise that the usefulness of video games has extended beyond the realm of entertainment and into that of academic research.

Jacqueline Pei, assistant professor in the Department of Educational Psychology, is looking at innovative ways to use video games to treat fetal alcohol spectrum disorder, a continuum of birth defects caused by a mother's consumption of alcohol during pregnancy.

"When I began looking at FASD populations, I started looking at how their memory was functioning and how their executive functions were affected by the disorder," said Pei. "I wanted to find a way to improve these functions. I believe the brain can be trained."

Using a video game called *Cognitive Carnival*, a computerized process approach training program, Pei is helping students with FASD to essentially train their brain.

Working with Carmen Rasmussen, professor in the Department of Pediatrics; Christian Beaulieu, professor in the Department of Biomedical Engineering; and colleagues at the University of Victoria, on a study entitled "Executive Functioning Training in Children With Fetal Alcohol Spectrum Disorder," Pei says they have found signs of improvement in cognitive functioning and self-regulation in those who have used the video game.

"The game taxes some underlying skills that are particularly challenging for people with FASD, such as the ability to inhibit or slow down responding and the ability to hold more than one idea in their mind at one time," said Pei. "For some of these kids, being able to learn how to hold back their responses for three seconds instead of one second is a big deal."

According to tests done with an MRI, Pei says her team is seeing improvement in the white matter areas of the brain in those who have used the video game.

Pei describes white matter areas of the brain as highways, with cars acting as the bits of information. "[Kids with FASD] are travelling on poorly maintained gravel roads in some cases but are expected to drive the same speed in the classroom as the kids who are driving on newly paved divided highways.

"The better we can understand these roads, the better we can understand the tests we do in terms of functioning. We can then tell teachers that a child is acting up in class because of the way their brain is processing information, not because they hate your class or they dislike being in school."

Pei says she believes students who use the game are training their own neural circuitry. "It is just like training your muscles for a sport. When you are playing soccer, you train your body to a point where you aren't thinking about how you are going to kick the ball, you just kick the ball," she said.

Pei is careful to point out that the research is still in its early stages and there is still some ground to cover before they can confidently say that the process they are working on is going to make a difference in all cases. She points to the importance of having an interventionist in place to help provide structure and support for the student. "It could be the one-on-one time with the interventionist that is making a difference or it could be any number of factors. We are seeing improvements in terms of functioning here, so we will continue to search for answers."

Ulimately, Pei says, "the brain can change."

"We have seen this happen in our research. This is very important because previously a lot of the focus has been on how to best identify and then support people with FASD. While I would never say that support is unimportant, I think we need to realize that there are some improvements that can be made with regard to functioning that can make a big difference in these individuals' quality of life."

> "[Kids with FASD] are travelling on poorly maintained gravel roads in some cases but are expected to drive the same speed in the classroom as the kids who are driving on newly paved divided highways."
>
> Jacqueline Pei

Supplied

Jacqueline Pei uses video games to help treat fetal alcohol spectrum disorder.

Piece added to Alzheimer's puzzle

Raquel Maurier

A medical research team at the University of Alberta has made two related discoveries that could shed more light on Alzheimer's disease.

Faculty of Medicine & Dentistry researcher Elena Posse de Chaves and her team recently published their findings in *The Journal of Neuroscience*.

It has been known for decades that cholesterol plays an important role in Alzheimer's disease. Posse de Chaves' team discovered that, in brain cells that accumulate toxic levels of the normally occurring beta amyloid protein, "there is a significant inhibition" in the process that creates brain cholesterol.

Brain cholesterol is vital for normal brain function because it helps protect neurons and helps brain cells fire properly.

What the discovery means is that the relationship between this naturally occurring protein and cholesterol is not just one-way. These findings have been suggested by other research teams as well. "Our work supports the idea that there is a two-way relationship," said Posse de Chaves, a researcher in the Department of Pharmacology.

Her team's work is also important in another area. Those who have Alzheimer's disease have low levels of a protein known as seladin-1. Some researchers believe this could be an indicator for the disease. This protein is part of the process that leads to the creation of cholesterol. So if cholesterol production is inhibited in Alzheimer's disease, as demonstrated by the U of A findings, this could explain why levels of the seladin-1 protein are so low.

"Our findings could explain why that one protein is decreased in the brains of patients with Alzheimer's disease," said Posse de Chaves. "This is one piece of the puzzle and every discovery helps."

According to the Alzheimer Society of Canada, more than 500,000 people in Canada and more than 35 million worldwide have dementia, a group of brain disorders that includes Alzheimer's disease.

The Canadian Institutes of Health Research and the Alzheimer Society of Canada funded the research.

Funding designed to open eyes to a career studying the stars

Brian Murphy

The efforts of a University of Alberta astrophysicist to introduce school kids to the wonders of the solar system and beyond are getting a boost of $50,000 over three years from a national funding agency.

The impact of Sharon Morsink's Sky Scan program has been recognized by the Natural Sciences and Engineering Research Council of Canada (NSERC) under its PromoScience program. Sky Scan has opened the skies to more than 1,100 Edmonton kids in grades 6 and 9.

While Morsink administers the program, Sky Scan's outreach demonstrator, Diane Wong, has visited 26 city schools since the program began in September. Sky Scan has also hosted 33 school visits to the U of A's new space observatory atop the Centennial Centre for Interdisciplinary Science.

> "Seeing it actually happen is a great learning experience."
>
> Sharon Morsink

Evening visits to the observatory can open the children's eyes to planets like Jupiter, but even daytime tour groups get an eyeful of outer space.

"During the day we use the solar telescope to show sunspots and a hydrogen alpha telescope to allow students to watch giant loops of gas forming on the surface of the sun," said Morsink. "It shows them the powerful electromagnetic activity of the sun, and seeing it actually happen is a great learning experience."

Morsink says Sky Scan is designed to fit in with the Alberta teaching curricula for astronomy and space science in grades 6 and 9. "The NSERC award, along with funding from the local branch of the Royal Astronomical Society, will enable us to extend our classroom visits to schools in outlying rural areas."

Richard Siemens

Astrophysicist Sharon Morsink at the observatory in the Centennial Centre for Interdisciplinary Science.

Morsink says Sky Scan's mission is simple.

"We're not trying to turn all these children into future astronomers, but our goal and the university's outreach goal is to get kids interested and excited about science," she said.

NSERC is a federal agency that helps make Canada a country of discoverers and innovators. Through its PromoScience program, the Government of Canada will provide $2.4 million to 49 organizations promoting science and engineering to young Canadians.

Morsink says you don't have to be a Sky Scan student to come out to watch the stars. The observatory will be open to the public on June 5 from 4 to 9 p.m. to watch Venus travel across the face of the sun.

U of A study takes bite out of nutrition barriers at schools

Bev Betkowski

A University of Alberta study has revealed challenges that schools are working through to adopt healthier food choices for their students in an effort to meet government guidelines for nutrition.

The study, recently published in the *Journal of Nutrition Education and Behavior,* showed that profit loss, parental concerns, student preferences and physical location of the school all pose challenges to adopting healthy eating guidelines set out by the provincial government.

The study was conducted as part of a larger U of A research project aimed at evaluating the awareness, adoption and implementation of the Alberta Nutrition Guidelines for Children and Youth in schools. The guidelines were released in 2008 by the provincial government to provide schools, child-care facilities and recreation centres with ways to use Canada's Food Guide and create healthy food environments.

The measures—all voluntary— include offering healthier food choices in school cafeterias and vending machines, serving smaller portions, supporting children who have food allergies and ensuring that students have appropriate time and space to eat.

Professor Linda McCargar of the U of A's Department of Agricultural, Food and Nutritional Science was interested in whether the guidelines were being adopted.

"Guidelines are released all the time, and we wanted to evaluate the ones in Alberta, particularly for such a broad audience of child-care facilities, schools and recreation centres," said McCargar, who led the study.

Using a phone survey of 19 questions, the U of A researchers interviewed principals, teachers or other staff from 357 urban and rural schools across Alberta, asking about school characteristics (such as proximity to malls), use of the Alberta Nutrition Guidelines, and any barriers to using them.

The survey showed that within one year of the guidelines being released, 65 per cent of the schools had adopted them in some way, whereas 35 per cent were considered not to be using them at that time. Schools that were larger, public, urban and had a designated food champion were more likely to adopt the guidelines, according to the study.

"The early buy-in was pretty good, but they still find it a challenge to follow the guidelines 100 per cent," said Anna Farmer, a co-author on the study and assistant professor in the Department of Agricultural, Food and Nutritional Science and the Centre for Health Promotion Studies.

Anna Farmer (left) and Linda McCargar conducted a nutrition study as part of a larger U of A project aimed at evaluating uptake of provincial nutrition guidelines for children in school.

The study revealed a lack of resources for schools to cover various financial or programming gaps in delivering the nutrition guidelines, such as covering the losses of funds previously raised through vending machine sales, or having a dedicated staffer to be a "food champion" in order to lead school initiatives on nutrition.

"By providing resources, the government will help schools move towards healthier food choices, and ultimately, we hope to see that the norm in schools and other youth facilities is that healthy eating is valued and that students learn more about nutrition," McCargar said.

The study was funded by a grant from the Canadian Institutes of Health Research.

Artist sketches in bridge *Between Two Worlds*

Ces Pereira

With one hand clutching a microscope, the other guiding a pen on paper, Ron Wigglesworth has literally drawn the "interdisciplinary" into the artwork that now graces the walls of the Centennial Centre for Interdisciplinary Studies.

In early May 2012, the Faculty of Science acquired a set of Wigglesworth's digital prints called *Between Two Worlds*. These works bridge the worlds of art, education and science. It is Wigglesworth's hope that they inspire viewers to think about their education in a different way.

> "A photograph provides us with a basic checklist, but when you draw something you spend time learning its secrets and that raises more questions."
>
> Ron Wigglesworth

Wigglesworth teaches drawing at the Faculty of Extension and created the series *Between Two Worlds* as part of his master's of education. He has over three decades of teaching experience, and says that, in addition to drawing instruction, he also enjoys promoting environmental awareness through this process.

In acquiring the artwork, the faculty has continued its commitment to providing science-inspired art in CCIS, adding to the student-drawn murals located in phase 1 and the magnificent terrazzo floor that flows through the main floor of the entire complex. The new art hangs in the hallway between the two largest lecture theatres on campus in CCIS.

Wigglesworth—inspired by the style of Renaissance artists—spent between 12 and 18 hours a day drawing the specimens from the entomological and zoological collections located in the Biological Sciences building. All told, the sketches took a year and a half to create, and the edition of the digital prints now hanging in CCIS took another six months of work in the printmaking studios in Fine Arts.

His sketchbook contains more than 200 detailed drawings of invertebrates, insects and fish that commanded the attention of people like biology professor Felix Sperling, who likened it to old sketchbooks of an explorer like Charles Darwin.

"A photograph provides us with a basic checklist, but when you draw something you spend time learning its secrets and that raises more questions," Wigglesworth said.

Ron Wigglesworth's art adorns the walls of CCIS.

Taxonomical and philosophical text is subtly layered atop his drawings and photos. Already an accomplished artist when he tackled this project, Wigglesworth says his observational drawings moved from intuitive to hyper-acute as he honed his skills to a sharp point.

"The words are cut off at times and so the viewer fills in the blanks themselves and discovers new paths of inquiry," he said.

This feat is made even more impressive considering his art is taxonomically correct, has no stray marks and was done drawing "blind." He often does not look at the paper as he works, preferring to focus on the subject instead.

"I'd like to see observational drawing used to accentuate the remarkable technology we have at our disposal in studying and recording science," Wigglesworth said.

Safety and fun are job one at the U of A pools

staff spotlight

Michael Brown

In any list of questions to determine what exactly a good career looks like, one of them has to be, "Do people come to your workplace to have fun?"

If the masses descend on your place of employment looking for a good time, you've probably taken the first step towards happiness, or in the case of University of Alberta aquatics supervisor Kelly Carter, the first plunge.

"Recreation is what I do, so when you look at all the jobs in the world, lifeguarding is one of those jobs where you can say people come to my work because they want to have fun," said Carter, who joined the U of A in 2009 after a long tenure with the City of Edmonton. "That is what makes my job so great. I work with a lot of people who are here to inspire people to have fun and be creative, which really keeps me going."

Carter says making pools safe takes a team effort, and he can't remember working with a better group. "The team I have is amazing. They really take ownership and want to do things right."

Carter oversees upwards of 30 full-time and part-time employees, the majority of whom are lifeguards.

"I teach lifeguarding courses myself, as well as CPR, first aid and swim-instructor courses," he said, adding that the U of A is the provincial training centre with The Lifesaving Society of Alberta and Northwest Territories.

"With that, we run a lot of the advanced lifeguarding courses throughout the province. I am proud to say the university ranked third last year for training the most lifeguards in the province, just behind the cities of Calgary and Edmonton."

Carter is also involved in helping to schedule and organize the university's full slate of recreational pool activities, from basic swim lessons and summer camps to scuba and kayaking courses.

"We're able to offer quite a wide variety of programs to the students and the general U of A population that is here."

Beyond scheduling and programming, Carter says he oversees the physical operation of both university pools, liaising with Facilities and Operations in overseeing the mechanical operations, and generally "making sure we have safe water, good water quality and physical structure."

Kelly Carter is the U of A's aquatics supervisor.

Student to help bring human rights monument to Ottawa

Michael Davies-Venn

Ottawa will have a new landmark that will serve as a reminder of protecting human rights and put Canada among Allied nations that have decorated their capitals with similar installations. All of that will come as a result of a recent federal law and the work of a University of Alberta graduate student, Daniel Friedman, who is at the helm of making it happen.

Friedman has been elected chair of the National Holocaust Monument Development Council, which was struck to spearhead a fundraising campaign to cover the cost of planning, building and maintaining a Holocaust memorial and advise John Baird, minister of foreign affairs, on the planning and design of the monument.

"I'm here to do my part to be able to make sure that no genocide happens to any people anywhere in the world," Friedman says. "Until now, we're the only Allied nation not to have a Holocaust monument in our capital. This Holocaust monument would be an eternal reminder of the potential horrors of humankind."

Richard Siemens

Daniel Friedman is chairing the National Holocaust Monument Development Council.

Friedman, who's completing his PhD in political science, says his effort at helping to protect and defend human rights is being aided by the U of A—an institution he says is at the forefront of helping to develop civil society.

"Here in Canada we have a country that is a great ally of democracy and human rights activism throughout the world, and specifically here at the university. We have here in the department, Dr. Andy Knight, somebody who stands at the forefront of human rights, activism and scholarship. We have a university that's not prepared to put up with any bigotry."

Knight, a professor of international relations and chair of the university's political science department, has been working to redress some of the worst atrocities when children are recruited to fight for government armed forces, paramilitaries and civil militia, often during wars. Knight's efforts to help, protect and rehabilitate child soldiers have been recognized with a grant from the Social Sciences and Humanities Research Council of Canada to study children and armed conflict.

Friedman says, through his work with the monument, he's proud to continue in the tradition of the U of A to stand against attitudes and practices that do not conform to protecting human rights. "Genocide has happened throughout the 20th century and continues to happen in our own lifetime—and whether we're talking Darfur or the Democratic Congo, there are issues. Hopefully we can use it as a tool to be able to educate people," he says.

> "We have a university that's not prepared to put up with bigotry."
>
> Daniel Friedman

He says the monument, which will grace Ottawa within the next three years, will help in preventing horrors of the past. "When people walk past this monument, they will look at it, and be hopefully inspired to ask the question as to what brought it about."

It's not clear yet what form the monument will take as the council's work has just begun. Friedman says the first step, which includes three other volunteers, "would be a visioning process of how a monument to the Holocaust, specifically in the Canadian context, should look." He says that stage requires more than having a discussion with artists and members of the National Capital Commission. His experiences working with researchers such as Knight will prove useful at this important stage, he says.

"There's an intellectual history to this kind of thing. Being in an academic setting, it's something I bring to the table, the ability to impress upon these laypeople who are my fellow council members the importance of understanding the broader aspect of what we're doing. What I will bring is scholarship on it."

The downside of dominating the market

Jamie Hanlon

We've said farewell to Friendster. Netscape Navigator is nevermore. As an Internet service provider, AOL is AWOL. What happened to these companies that once ruled their individual markets? According to two University of Alberta researchers, their market dominance made them vulnerable.

In a research paper recently published in *MIT Sloan Management Review*, University of Alberta marketing professors Kyle Murray and Gerald Häubl posit that it may only take an upstart competitor to make the mighty fall in the hearts and minds of consumers. What causes consumers to react negatively, and how the backlash could be potentially mitigated, are lessons that current market leaders (such as Google) and struggling once-dominant companies (such as Research in Motion) should learn from former market leaders.

"One of the lessons that we've seen in our research is that it's better for people if they have a choice," said Murray.

Richard Siemens

U of A marketing researchers Gerald Häubl (left) and Kyle Murray.

> "The goal for a smaller company, even in the market with a dominant player, is to be that alternative as opposed to competing head-on for the exact same customers."
>
> Kyle Murray

The researchers found that if consumers are in a position where they have only one choice of a product or service, such as an airline or specific software, they will use it—but merely out of resignation. Yet, when a competitor enters the market with a good alternative, consumers will now feel they have a choice and may flood to the new product or service simply for that reason.

It may sound like mere fickleness on the part of the consumer, but the researchers say it is more about exercising freedom.

"Even though we still get really good at shopping at that store or using that interface or website, we never formed that loyalty and we want to assert our freedom to choose," said Häubl. "Eventually, when a new competitor enters the stage, we are inclined to try that and actually switch away from that incumbent."

Though success in the marketplace is generally a good thing, too much success can be the pride before the fall. As Murray notes in the paper, recognizing the need for competition or being satisfied with a cut of the market share can perhaps be a key to maintaining one's place at the top. Back in 1997, he says, Microsoft invested $150 million to keep Apple afloat. And although Windows may have the lion's share of operating system control, Apple has found its own place in the world as well, in part due to that hand up from a competitor.

"Apple has made this comeback and now they're the largest company in the world by stock valuation," he said. "People may think Apple's going to be dominant forever. [That's] unlikely. Somebody else will come along and people will start to say, 'Everybody has an iPhone, I want something different,' and we'll see some switching."

For the players with a large market share, reminding consumers that they have a choice is a smart strategy to employ, say the researchers. Häubl says using supportive, comparative advertising is one way to prompt customers about their choices—and remind them of why they choose the way they do. "Settle for a large market share as opposed to a dominant market share," suggests Häubl, because trying to push out a competitor will be costly and largely unsuccessful. The reverse logic applies for smaller companies, says Murray.

"Sometimes you feel like the big competitors are so dominant, there's nothing you can do to get away from them or compete," he said. "There's always a segment out there of people who want an alternative.

"The goal for a smaller company, even in the market with a dominant player, is to be that alternative as opposed to competing head-on for the exact same customers."

Creatine may help negate liver damage caused by high-fat diets

Ken Mathewson

A collaborative study involving researchers at the University of Alberta, the University of São Paulo in Brazil, and the Memorial University of Newfoundland has shown that creatine, a naturally occurring amino acid in the human body, may contain properties that help fight the onset of non-alcoholic fatty liver disease caused by a high-fat diet.

René Jacobs, assistant professor with the Department of Agricultural, Food and Nutritional Science, was co-author of a research paper recently published in *The Journal of Nutrition*. The research indicates that taking creatine as a supplement can help prevent non-alcoholic fatty liver disease, as well as numerous other negative health effects associated with high fat intake, such as inflammation and oxidative stress.

"Creatine occurs naturally in the human body," said Jacobs, "and can also be obtained through dietary means from things like meat, fish and dairy products. However, it's also available as a supplement in any health-food store, and it's reasonably inexpensive."

Findings from the study indicated that creatine supplementation prevented the increase in liver fat stores that normally occurs after ingesting a high-fat diet.

"We have been studying the metabolism of creatine for a long time and wondered whether supplementation would have a beneficial effect in the liver. We thought that it would increase transport of fat from the liver. That wasn't exactly what we found, but, of course, that's why we do the experiments."

Non-alcoholic fatty liver disease is one of the most common chronic liver diseases in the world. It can result in a myriad of other health issues, including insulin resistance, Type 2 diabetes, obesity and high blood pressure.

Jacobs is quick to point out that his findings do not mean people can or should start eating with impunity, citing evidence that high-fat diets have health consequences beyond affecting the liver.

"This is, by no means, some kind of silver bullet that allows people to eat excessive amounts of saturated fat without any health risks," he said. "High-fat diets lead to issues like heart disease and stroke. This does suggest, however, that supplemental creatine, combined with a healthy lifestyle, could lead to some significant improvements in people's overall liver health.

Supplied

Rene Jacobs (centre), post-doctoral fellow Robin da Silva and graduate student Karen Kelly are involved in research suggesting that creatine may help prevent liver disease caused by a high-fat diet.

Engineering professor's outstanding teaching is by design

Jenna Hoff

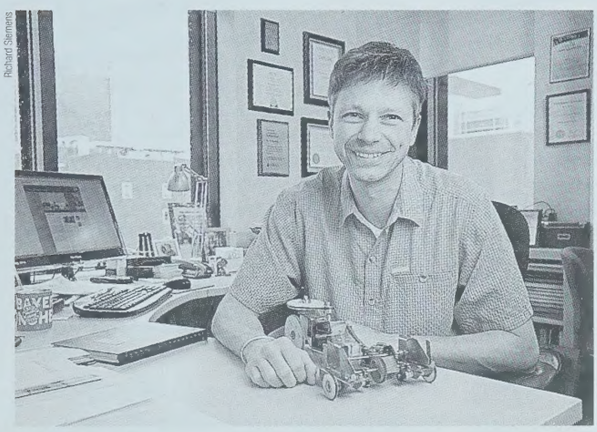
SAE International is honouring mechanical engineering professor Pierre Mertiny with a major worldwide teaching award in recognition of his dedicated teaching efforts.

"Considering the number of excellent instructors in North America alone, I feel honoured receiving an international teaching award," said Mertiny, who will receive the prestigious Ralph R. Teetor Educational Award in June at the 2013 SAE AeroTech Congress and Exhibition in Montreal.

SAE International is a global organization for engineers in the aerospace, automotive and commercial vehicle industries.

> "Professors are often perceived as researchers with inevitable teaching duties. However, this is not true, as many of my colleagues and I share a passion for student education."
>
> Pierre Mertiny

Richard Siemens



Mechanical engineering professor Pierre Mertiny has won the prestigious Ralph R. Teetor Educational Award.

A dedicated educator who came to the U of A from Germany and started as a faculty member in January 2006, Mertiny values the opportunity to make a difference in the lives and education of students.

"I enjoy teaching because in my line of work it probably gives the greatest value to society," said Mertiny, who runs a successful research program in advanced polymer composite and nanocomposite material manufacturing, design and analysis. "Research is certainly an important part of being a professor, and it is an exciting activity as well, but arguably the biggest impact can be made by preparing young people for their future lives and careers."

He adds, "Professors are often perceived as researchers with inevitable teaching duties. However, this is not true, as many of my colleagues and I share a passion for student education."

Mertiny, who teaches courses in mechanical engineering design and solid mechanics, says he incorporates both active learning and experienced-based learning strategies into his teaching to maximize and enhance student learning.

Active learning, he explains, places the responsibility of learning on students. "This is done primarily through collaborative and supportive in-class activities such as group work and one-to-one interactions, with the professor remaining the driver of the learning process by structuring and providing the study material," he said.

Experience-based learning goes a step further by making the students the driver of their own learning experience, said Mertiny, adding that in his design courses, student groups are put in charge of their decision making, work progress, and ultimately their own success.

"I take the role of an advisor whom the students consult regularly for guidance," he said. "It is quite stunning how much the students become motivated and excited about their work."

Rectal cancer research shows there is room to improve

Bryan Alary

Research from the University of Alberta provides new insight into treatment patterns for people with stage two and three rectal cancer—information that ultimately will help physicians improve care strategies for patients provincewide.

Lead researcher Marcy Winget, an epidemiologist with the School of Public Health, says the study of more than 900 patients with rectal cancer is a first step to addressing gaps in care and ensuring that general practitioners, surgeons and oncologists improve co-ordination of treatment for patients.

> "Co-ordination of care, particularly when treatment requires input from multiple specialists, is complex and often difficult to organize."
>
> Marcy Winget

"Co-ordinating patient care is a challenge healthcare agencies face around the world—how do we maximize co-ordination? There isn't a single answer," said Winget, who also holds an appointment with Cancer Care, Alberta Health Services. "One of the things this study shows is there is room for improvement in co-ordinating health care. We as a medical community need to figure out how to improve it."

The study, published in a recent issue of *Clinical Oncology*, is one of five research papers by Winget and her team of graduate students on the quality of colorectal cancer care in Alberta. They examined records of rectal cancer patients diagnosed from 2002 to 2005.

The goal was to determine whether patients received treatment consistent with guidelines and to identify patient groups at risk of not receiving guideline treatment. Canadian guidelines call for a minimum of surgery followed by chemotherapy.

The study showed that 54 per cent of patients did not receive treatment consistent with the guidelines, including 18 per cent who did not see an oncologist—a necessary step to receive chemotherapy. Some 28 per cent saw an oncologist but did not receive chemotherapy, and eight per cent received chemotherapy late (more than 12 weeks after surgery).

The study also examined demographic data such as age, income and area of residence to look at how they may affect treatment patterns throughout the province.

Patients living in Edmonton were twice as likely to have a consultation with an oncologist after surgery as those living in Calgary or other parts of central or southern Alberta. Once a patient had a consult with an oncologist, however, region of residence was not associated with receiving chemotherapy.

Age was another factor, with 78 per cent of patients aged 75 and older not receiving treatment according to guidelines. Some 42 per cent were not referred to an oncologist.

Although older patients are more likely to have other diseases and ailments that could prevent them from being a candidate for chemotherapy, age was still the largest factor in not receiving chemotherapy.

"The bottom line is there's variation in how individual oncologists perceive co-morbidities and age in a patient's ability to tolerate chemotherapy and be a chemo candidate," Winget said. "We wouldn't expect 100 per cent of rectal cancer patients to be medically eligible, but surely the number should be more than 50 per cent."

Winget said the overall results suggest that tighter co-ordination between surgeons and oncologists is needed, as is greater clarity regarding guidelines for colon and rectal cancer, which are similar diseases but are treated slightly differently. With Canada's first school of public health, the U of A also has a leadership role in ensuring the health and wellness of Canadians and reducing health disparities here and across the globe.

"Co-ordination of care, particularly when treatment requires input from multiple specialists, is complex and often difficult to organize," said Winget. "Ideally, the system would include joint treatment planning with all relevant specialists to ensure every single cancer patient receives the best care possible."

Narrowing the search for life on Mars

Brian Murphy

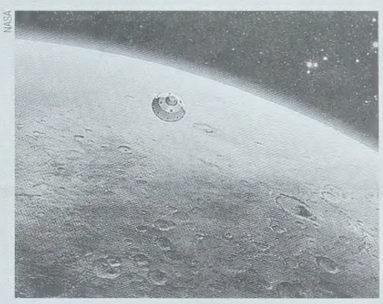
Is there life on Mars? A definitive answer to that age-old question might be a little closer thanks to a startling discovery about the Red Planet's geology that was made with help from a University of Alberta researcher.

U of A geologist and meteorite expert Chris Herd was part of a team that identified a previously undiscovered source of carbon in several Martian meteorites.

A Martian meteorite is rock ejected from Mars by impact from an asteroid or comet. It arrives at Earth in a ball of fire. The meteorite's origins are determined by an analysis of its chemical elements that researchers have identified as markers for Mars. All Martian meteorites formed as lavas that cooled at the surface.

"We identified carbon-bearing compounds that originated as part of hot magma from within Mars' mantle layer," said Herd. "The magma erupted at the surface of Mars the same way volcanic rock forms here on Earth."

NASA



Part of the Curiosity mission to Mars is to find out whether life existed on the Red Planet.

Herd says this is the first time organic-like carbonaceous material has been found emanating from beneath Mars' surface. Herd adds the discovery opens up new possibilities for determining whether life ever existed on the planet.

"If Martian meteorites are representative of magmas throughout Mars' history, then they are also representative of the mechanism by which raw materials for life were delivered from the interior of the planet to the surface," said Herd.

Herd says the research team's work could be useful information for NASA's next mission to Mars. The Mars Science Laboratory mission with the rover vehicle, named Curiosity, is scheduled to land on Mars Aug. 5.

Herd says the carbon-bearing compounds he identified are only 200 million years old and do not necessarily have a connection to life on Mars at that time, but he adds things could change with Curiosity's mission.

"Curiosity could find older carbon-bearing rock, which might be linked to life on Mars at an earlier time in the planet's history," he said.

Herd was a co-author on the research led by Andrew Steele of the Carnegie Institution of Washington. It was published May 24 in the journal *Science Express*.

news [shorts]

folio presents a sample of some of the stories that recently appeared on the ualberta.ca news page. To read more, go to www.news.ualberta.ca.

Sage Award for a professor emeritus

Professor emeritus Frank Weichman recently received a Sage Award from the Seniors Association of Greater Edmonton for his service as a volunteer in the public and non-profit sectors of Edmonton.

Born in Germany, raised in Holland and educated in New York, Weichman received his PhD from Northwestern University, near Chicago, and joined the University of Alberta's Department of Physics in 1958 during what he remembers as "a period of extreme expansion," with about "four professors hired each year for two to three years running."

In about 1960, two of Weichman's physics colleagues, Lynn Trainor and Joe Lipson, started a high-school outreach program, which Weichman eventually joined.

He continues to be involved in physics education projects, taking physics demos out to local grade schools and working in collaboration with Brian Martin, founder of The King's Centre for Visualization in Science at the King's University College to produce online context problems in physics for use by physics teachers at both high-school and university levels.

In the late 1990s, a few years after he retired, Weichman became a founding board member and long-serving treasurer of iHuman, a non-profit society that helps at-risk youth through arts programming.

His interests in physics, improving people's lives and sustaining the environment dovetail with another interesting undertaking: developing a low-cost, low-maintenance ceramic cooking stove.

About 15 years ago, Weichman started to develop a stainless-steel, energy-efficient portable stove for backpacking. He thought a ceramic version might also work for more stationary situations where fuel was scarce. Serendipitiously, a group of university students approached Williams with a project to make a ceramics-based water filtering system. The group, Innovative Canadians for Change, brought both items to rural Kenya. Kenyans are now making them with local materials.

New vice-provost named

Duane Szafron has accepted the position of vice-provost and associate vice-president (information technology) effective July 1 following the conclusion of Jonathan Schaeffer's term.

Szafron received a PhD in applied mathematics from the University of Waterloo in 1978 and is currently a professor of computing science. He was the first vice-dean of the Faculty of Science and has served two terms on GFC and GFC Executive. Szafron has been conducting research in object-oriented computing since 1980, including language design, language implementation, programming environments and parallel computing.

Current research interests are in computer games, especially believable characters in video games and decision agents that are capable of playing computer poker against the world's best human players. Having taught computing courses to students at all levels, from first year through graduate school, Szafron won the Faculty of Engineering Undergraduate Teaching Award in 1987 and the U of A Graduate Students' Association Award for Excellence in Supervision in 2006.

Dean of Campus Saint-Jean's term extended

The Board of Governors has approved a one-year extension to the appointment of Marc Arnal as dean of Campus Saint-Jean for the period of July 1, 2013 to June 30, 2014. Marc will be completing his second five-year term of office as dean on June 30, 2013.

The extension was put in place to bridge U of A provost Carl Amrhein's administrative leave, which runs from July 2012 to June 2013, at which time the provost will be able to chair the dean selection committee.

laurels

The late **Gordon Hirabayashi**, who fought the internment of Japanese-Americans during the Second World War and later was a sociology professor and eventual department chair at the U of A, will be awarded the Presidential Medal of Freedom posthumously from U.S. President Barack Obama May 29. Hirabayashi, whose time at the U of A began in 1959 and lasted well beyond his retirement in 1983, died earlier this year. He was 93. The Presidential Medal of Freedom is the highest civilian award in the U.S.

Zhenghe Xu, professor in the Department of Chemical and Materials Engineering, received the 2012 Frank Spragins Technical Award from the Association of Professional Engineers and Geoscientists of Alberta in recognition of his integrity, expertise and outstanding accomplishments in the field of mineral and oilsands processing.

Grant-writing course bears fruit and vegetables

Carmen Rojas

Roger Graves thinks of his Writing Studies 302 class as "a course with consequences," and for his most recent group of students, one of those consequences was helping a community garden secure a $5,000 grant to build a greenhouse.

The 10 students enrolled in Graves' class last fall learned the ins and outs of proposal writing through first-hand experience, thanks to a community service-learning component that put them in direct collaboration with local organizations in need of funding.

"You teach students to do this kind of writing, which is really important to them later on, but in the context of actually doing it for a group that otherwise doesn't have the skills to [write the applications]," said Graves, director of the Writing Across the Curriculum program and a professor in the Department of English and Film Studies.

One of the organizations the class worked with was the Edmonton Organic Growers Guild (EOGG). The group of 100 volunteers runs a community garden at UAlberta's South Campus, on four acres provided by the Department of Agricultural, Life and Environmental Sciences. The fruits and vegetables they grow each season are split between gardeners and Edmonton-area food banks.

EOGG president Travis Kennedy says they had applied for small grants in the past to cover the cost of seeds and other growing materials, but they had no experience tackling the more complex process of researching and applying for larger grants.

That's where the students stepped in, working through a three-stage process under the guidance of Graves. First, they literally got their hands dirty alongside Kennedy and other members of the EOGG as they focused on learning as much as they could about the organization.

"They soaked it up and tried to figure out who we are and what we do, and what grants we had the best chance of getting," said Kennedy. "A lot of the students came out three or four times and picked our brains as we worked together. They all took away different things that we do or contribute–from the fact that we contribute to the greater Edmonton community through food banks, to the fact that we're teaching people to grow their own food."

Roger Graves (left) and his Writing Studies 302 class secured funding for a greenhouse for the Edmonton Organic Growers Guild.

Next, with a firm grasp of the EOGG's needs and objectives, the students went into research mode, scouring the Internet to eventually identify the Government of Alberta's Community Initiatives Program (CIP), which allocates funds from the Alberta Lottery Fund, as a likely funder. The students then set about individually drafting applications, which were compiled and sent to the EOGG for their input and evaluation before the final application was submitted.

When Graves received word earlier this month that the EOGG had been awarded $5,000 thanks in part to his students' efforts, he was thrilled.

"This $5,000 grant gave me more of a charge [than other grants] because we were able to help that organization and the students really saw the success of their work," he said.

That success is soon to be in place at the garden thanks to funding by the CIP grant as well as $2,500 from the Alberta Public Interest Research Group.

"With the greenhouse, they can do more educational things, they can get started earlier, they can grow their own seedlings so they don't have to purchase plants," said Graves. "There are so many good reasons for it."

classified ads

ACCOMMODATIONS FOR RENT

LIVE IN THE HEART OF THE UNIVERSITY. Executive 2 bedroom plus den, over 1,400 sq. ft. condo. Beautifully design with top of the line style. Underground parking. 11111-82 Ave. $2,400/month. Gordon W.R. King & Assoc. Real Estate Corp. Call Michael Jenner and Janet Fraser at 780-441-6441 or email jennfra@interbaun.com.

TURNKEY FURNISHED SUITE. Stunning 1 plus den (second bedroom) 1.5 bath, Turnkey furnished suite with underground parking. Steps from the university. 11011-86 Ave. $1,600/month. Gordon W.R. King & Assoc. Real Estate Corp. Call Michael Jenner and Janet Fraser at 780-441-6441 or email jennfra@interbaun.com.

EXECUTIVE SUITE. Turnkey furnished 1 bedroom with underground parking across from University Campus and LRT. Large executive suite with everything you need! Short term rental available until December, long term negotiable. 11027-87 Ave. $1,500/month. Gordon W.R. King & Assoc. Real Estate Corp. Call Michael Jenner and Janet Fraser at 780-441-6441 or email jennfra@interbaun.com.

RAVINE LIVING. Beautiful large turnkey furnished 1 bedroom suite. Close to Ravines off 142st street. All utilities, cable, Internet included with cleaning service too. Call Today. $1,600/month. 143 & 99 Ave. Gordon W.R. King & Assoc. Real Estate Corp. Call Michael Jenner and Janet Fraser at 780- 441-6441 or email jennfra@interbaun.com.

WESTERN RELOCATION SERVICES LTD. Is looking on behalf of a client for a 3 bedroom plus home for a long term lease, in Grandview and Windsor Park area Edmonton. Please call Michael Jenner or Janet Fraser at 780-441-6441 if you are interested in leasing your home.

BRAND NEW GARDEN SUITE. Windsor Park, 2 block walk to U of A/hospital. Extremely quiet, private, large windows, 800 sq. ft. 2 bedrooms, $1,750. All new 6 appliances. Includes utilities, parking. Melita 780-484-9278 or mjammed@telus.net.

BEGRAVIA. 2 bedroom condo close to U of A, LRT, river valley. Available July 1st. No pets or smoking. Unfurnished for $1,100/month, but can furnish according to tenant needs for additional amount. Daena 780-436-8713 or tdlamoureux@hotmail.com.

CONDO FOR RENT. July 1st, Saskatchewan Drive/U of A. Bright, clean, 2 bedroom, 2 bath, 2 balcony, gas fireplace, river view. 6 appliances, underground parking. $1,400/month. 780-438-6410.

LENDRUM HOUSE. 3 bedroom bungalow. Steps to LRT, schools, shopping and University Hospital. Available immediately. 1 year lease preferred $1,300/month. 780-469-1859 Joan or stefan.lalonde@ualberta.ca.

OLD STRATHCONA SUMMER RENTAL. July 1 – Aug 31. Fully furnished, 2 bedroom plus study, 2 baths, cathedral ceiling, DR, spacious family room. Close to U of A. No pets. $1,700/month, utilities included. Some yard work required. Marie & Doug 780-435-6795 or mariechidley@shaw.com.

MODERN CONDO IN GARNEAU. Superbly renovated condo, walking distance to the university. Claridge House, brick building, features swimming pool, hot tub. 1,362 sq. ft., 2 bedroom, 1½ bath, 2nd floor, elevator to secure heated parking stall. Large master with en suite, extra storage off balcony, and in renovated closets. Gorgeous kitchen with new appliances, new cabinets, granite countertops throughout. A/C, washer, dryer, freezer. Unique barn wood grain commercial flooring, modern rugs. No pets, no smoking all utilities included. June 1st occupancy. $1,800/month. Heather 403-379-2101 or jaques@netago.ca.

BELGRAVIA. August 1st occupancy. 3 bedroom house in south Belgravia. $2,550/month. 11833-71A Ave. 780-886-6005.

ACCOMMODATIONS FOR SALE

GORGEOUS, MODERN, COZY, CENTRAL CONDO. Cheaper than renting. For info and pictures enter ad# 348251134 in "search" box on www.kijiji.ca.

ACCOMMODATIONS WANTED

UNIVERSITY FACULTY MEMBER. Seeks 3 bedroom house near campus for fall semester 2012 (Sept – Dec). Please contact raft@ualberta.ca.

SERVICES

PIANO LESSONS. Creative, patient, innovative piano teacher available in Allendale. Anita 780-437-2332.

BUYING, SELLING, LEASING, CALL ME FIRST. Connie Kennedy 780-482-6766, 780-940-0414. Pioneer Condominium Specialist. www.conniekennedy.com. RE/MAX Real Estate.

DELUXE SERVICED & VIRTUAL OFFICES. Now available at the Ritchie Mill on Saskatchewan Drive. Access to lounge/meeting areas. Excellent for consultants. Contact Heather at (780) 437-0799.

Community service learning trip to Mexico spurs students to action

Alexandria Eldridge

A community service learning trip has spurred students to increase Canadian awareness about poverty and social justice in Mexico and raise funds for families in an impoverished area.

Arisha Seeras, who just finished her fourth year of nutrition and food science, said the trip opened her eyes to many issues she hadn't considered before, such as malnutrition in Mexico and increasing cases of diabetes.

"A trip like this takes you out of your own bubble," she said. "You think, 'life is so great in Canada, there's nothing wrong out there.' But it's when you actually go out there and face the people, that's when you realize how much pain and suffering there is in other parts of the world. The trip stimulated me to do way more than what I'm doing right now."

Seeras was one of 12 students and staff members from the Faculty of Agricultural, Life and Environmental Sciences who travelled to Cuernavaca, Mexico from April 28 to May 7, where they learned about social justice issues in the country relating to globalization and poverty. They attended various workshops, met with local families, and built a roof and a wall for needy families living in La Estacion, a squatters' settlement just outside Cuernavaca.

Megan Hoffman, a third-year nutrition student, helps kids do crafts in a squatters' settlement outside of Cuernavaca, Mexico.

Maria Jose Montenegro, an environmental economics and policy student entering her fourth year, also said the trip opened her eyes to considering social justice in Mexico in a different light.

"We got to see the developing countries' part," she said. "We talked a lot about globalization and problems around natural resource dependency, but it's a very Canadian perspective. When we went, we actually got to see the issues and the countries that are actually affected by them."

The group stayed at the Cuernavaca Centre for International Dialogue on Development, which runs programs to help families in La Estacion. There, they were able to interact with people from the community and hear their stories.

"We saw people who had to immigrate from more impoverished areas to this squatters' settlement, and the conditions of living there were not good, but better than where they'd come from—which is mind-blowing," said Shannon Clarke, the student engagement coordinator for ALES and one of the co-leaders of the trip.

Seeras noted that many families had been waiting a long time for assistance, making the gratitude of the families they helped a highlight of the trip.

> "The trip stimulated me to do way more than what I'm doing right now."
>
> Arisha Seeras

"To us it was just a job is done, but to them it meant so much more," she said. "I didn't think I did a lot of work, but for them, just us going there and helping them out just made them really happy. They were just really grateful."

Now that they've returned, the group has put together an action plan to raise awareness about the CCIDD and host a fundraising dinner and silent auction with the proceeds going to support families in La Estacion.

More information about the group's trip and fundraising efforts can be found at www.alesabroad.wordpress.com.

talks & events

Talks & Events listings do not accept submissions via fax, mail, email or phone. Please enter events you'd like to appear in folio and at www.news.ualberta.ca/events.
A more comprehensive list of events is available online at www.events.ualberta.ca. Deadline: noon one week prior to publication. Entries will be edited for style and length.

UNTIL MAY 30

In Focus: Blind Photographers Challenge Visual Expectations. This exhibition features blind and partially sighted photographers exploring the built environment. Rutherford Library South Foyer.

UNTIL JUNE 8

InSight: Visualizing Health Humanities. An exhibition to broaden our understanding of the emerging field of health humanities through visual, sound and performance explorations. FAB Gallery

UNTIL JUNE 9

Super-Vision!: Michael Eubank. This exhibition is the final visual presentation for the degree of Master of Fine Arts in Painting. FAB Gallery.

UNTIL JULY 14

China's Imperial Modern: The Painter's Craft. Do not miss this exciting new exhibition from the U of A Museums highlighting objects and artworks from the Mactaggart Art Collection. Through consideration of ink paintings, wood-block printed books, sketchbooks, and artist's tools such as inkstones and inksticks, The Painter's Craft asks how modern ways of making pictures—from mechanical copying to creative appropriation—emerged from the ink painter's studio and contributed to the crafting of everyday life in China during the imperial era. Telus Centre.

MAY 28

CENTENNIAL LECTURES

Why Do Hearts Fail? lecture will be given by Justine Ezekowitz and Howard Young. 5–7 p.m.
Allard Family Lecture Theatre,
Katz Group Centre for Pharmacy and Health Research.

MAY 30

Administrative Professional Officers – Annual General Meeting. All the university's administrative professional officers are cordially invited to this meeting where reports will be given on the activities and accomplishments of the APO committees for the past year. 2–5 p.m. Wild Rose Room, Lister Centre.

MAY 31

Using Viruses to Fight Cancer. Patrick Lee is presenting this public lecture as part of the Li Ka Shing Institute of Virology & Gairdner Foundation Symposium held from May 31 to June 1 Bernard Snell Hall in the University Hospital 6:45–8 p.m.

Oil and Democracy Speaker Series. Talk entitled Issues of Equity, Aboriginal Rights will be given by Eriel Deranger, communications co-ordinator of the Athabasca Chipewyan First Nation. 7–8:30 p.m.
Natural Resources Engineering Facility, Markin/CNRL (NREF).

JUNE 6

School of Energy & the Environment (SEE) Seminar Series: Human Environments, Natural Resources and Social Sustainability in the Energy Sector. John Parkins, associate professor in the Department of Resource Economics & Environmental Sociology, will be drawing on a series of recent research projects that explore questions of human environments and social sustainability in the context of resource development. From a backdrop of 40 years of research on boomtowns in North America, Parkins will introduce three recent case studies in Alberta to provide detailed insights into the challenges of social sustainability in the booming energy sector. The topics will revolve around aspects of work life and local culture that lead to substance abuse in a resource town, challenges of immigration as a model of economic development in rural Alberta and experiences of women in a resource town as an often overlooked category of social sustainability. Parkins will conclude with alternative proposals for public governance and economic coordination that might lead to enhanced social sustainability in the energy sector. Noon–1:30 p.m. 5-40 Stollery Executive Development Centre, Alberta School of Business.

JUNE 7

Oil and Democracy Speaker Series. This talk, entitled Environmentalism and International Activism, will be delivered by Mike Hudema, Greenpeace, Climate and Energy Campaigner; and Chelsea Flook, director of the Sierra Club Prairie. 7–8:30 p.m. Natural Resources Engineering Facility, Markin/CNRL (NREF).

SPRING CONVOCATION 2012

May 26		Fan Zeng will receive an Honorary Doctor of Letters degree at a special ceremony in Beijing.	
June 3	2:30 p.m.	Faculty of Augustana held at Augustana Campus in Camrose	
June 5	3 p.m.	Faculty of Business and Faculté Saint-Jean	Chantal Petitclerc will receive an Honorary Doctor of Laws degree.
June 6	10 a.m.	Faculties of science (general degrees only) and law	Donald Bruce Dingwell will receive an Honorary Doctor of Science degree.
	3 p.m.	Faculties of science (honours and specialization degrees only) and agricultural, life and environmental sciences	John Stanton will receive an Honorary Doctor of Laws degree.
June 7	10 a.m.	Faculty of Engineering	Garry Lindberg will receive an Honorary Doctor of Science degree.
	3 p.m.	Faculties of pharmacy and pharmaceutical sciences and nursing	Shirley Stinson will receive an Honorary Doctor of Science degree.
June 8	10 a.m.	Faculty of Medicine & Dentistry	Julio J. Frenk will receive an Honorary Doctor of Science degree.
	3 p.m.	Graduation proceedings for the Faculty of Extension	
June 11	3 p.m.	Faculties of education (elementary degrees only) and native studies	The Right Honourable Paul Martin will receive an Honorary Doctor of Laws degree.
June 12	10 a.m.	Faculties of education (secondary and adult degrees, and diplomas only) and physical education and recreation	Mary May Simon will receive an Honorary Doctor of Laws degree.
	3 p.m.	Faculties of graduate studies and research (master's degrees and postgraduate diplomas), rehabilitation medicine (master's degrees only) and public health (master's degrees only)	James Jude Orbinski will receive an Honorary Doctor of Laws degree.
June 13	10 a.m.	Faculties of arts (departments beginning with A – K only) and graduate studies and research (Doctor of Philosophy, Doctor of Education, and Doctor of Music degrees only)	Holger Petersen will receive an Honorary Doctor of Letters degree.
	3 p.m.	Faculty of Arts (departments beginning with L – Z only)	

PREPARING FOR FLIGHT

the BackPage

Each spring, all graduating First Nations, Métis and Inuit students have the opportunity to be recognized in a special Honouring Ceremony during convocation. The ceremony includes the presentation of a beaded eagle feather, which is considered to be the highest honour that can be awarded within Aboriginal cultures.

For this year's ceremony, U of A volunteers—led by Shana Dion, director of the Aboriginal Student Services Centre, and Tracy Bear, special advisor to the provost—kept the feather adornment and beading in-house, rather than sending them away to be decorated.

"Through this process of beading together, it has shown to me our community, our passion, our commitment, our creativity and more importantly not being scared of failure," said Dion. "There will be a greater sense of pride honouring our students this year knowing all the love and attention that went into each one of the feathers."

Photos by John Ulan